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Betting on shale

Oil firms apply for federal permits, look to simplify extraction

By Gargi Chakrabarty, Rocky Mountain News
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Eight U.S. companies have filed applications with the federal government to lease land in Colorado for oil-shale development, a sign that oil producers again are ready to gamble some 23 years after the last boom went bust.



Dennis Schroeder © News

Low-quality oil shale is handled recently by a Shell official at the Mahogany research project in Rio Blanco County near Rifle.

The U.S. Bureau of Land Management, the arm of the Interior Department that manages federal lands, has received 10 drilling applications, including three from Shell and one each from Exxon Mobil and Chevron. The companies want to develop technologies to extract oil from shale on 160-acre federal tracts in Rio Blanco County in northwestern Colorado.

The government said it will tread carefully, since it doesn't want to repeat the oil shale boom-and-bust cycles of the 1970s and 1980s that almost devastated the Western Slope's economy.

But with crude oil above \$66 a barrel at the close of trading Tuesday, oil shale is a promising alternative to crude. The Green River shale deposits in Colorado, Utah and Wyoming are estimated to contain 1.5 trillion to 1.8 trillion barrels of oil, and while not all of it can be recovered, half that amount is nearly triple the proven oil reserves of Saudi Arabia.

Many residents of western Colorado still remember "Black Sunday," or May 2, 1982, when oil giant Exxon (now Exxon Mobil) announced the closure of its \$5 billion Colony shale project in Garfield County and laid off 2,200 workers.

A team of BLM and state officials will review the applications, with a final decision by February 2006.

"We had an oil shale program in 1973-74. There was a spurt of development then, but the economic viability of the technology was not adequately established, and communities in the Western Slope were affected in a negative way," said Heather Feeney, BLM spokeswoman in Washington, D.C. "We are trying to learn lessons from that. This time, we are taking a phased approach."

Feeney said the team would evaluate the lease applications to determine if the companies would be able to advance shale technologies and reduce impact on the environment and local communities.

A successful company - with a viable technology - also would have the option of leasing an additional 4,960 acres in the next 10 years.

Meanwhile, the recently passed Energy Policy Act of 2005 requires the BLM to begin leasing tracts for commercial shale production by August 2007, after it completes an environmental impact study in the previous six months.

Environmental activists have denounced the government's move as too rash, given that a viable technology has yet to be established and the Western Slope already has witnessed the perils of shale hype. Even U.S. Sen. Ken Salazar, D-Colo., has expressed concern about the pace of shale development in his state.

"The lessons we learned in Colorado in the 1980s and other booms is . . . it is a difficult challenge to be able to develop oil from oil shale," Salazar said when the energy bill passed in August.

A year after Black Sunday, property foreclosures in Grand Junction and Mesa County were more than four times their 1980 numbers, and bankruptcies had doubled.

"That project was initially driven by high global price expectations based on projected oil shortages in the early 1980s and beyond," said Exxon Mobil spokesman Len D'Eramo from Houston. "When global oil prices dropped, and oil price expectations dropped even further, the Colony oil shale technology was no longer economically viable.

"The current BLM program favors a phased approach to developing oil shale extraction technologies."

Exxon Mobil, Shell and Chevron are among six companies that will develop an in-situ technology to extract shale oil, Feeney said. Two other companies - Natural Soda Inc. and Kennecott Exploration Co. - will use a traditional process in which shale is mined, crushed and then heated in giant ovens called retorts to extract the oil.

Shell is a pioneer of the in-situ process, in which it drills holes and inserts heaters in target underground zones to slowly heat the shale layers.

Once the shale is sufficiently heated, a chemical reaction starts and releases the lighter hydrocarbons, which rise. The heavier hydrocarbons remain within the formation. The lighter hydrocarbons, almost a gasolinelike product, are subsequently pumped from the ground through conventional means.

The advantage to in-situ is that it eliminates the problem of waste disposal and enables higher recovery of oil, Terry O'Connor, Shell's vice president of external and regulatory affairs, has said.

For at least the past five years, at Shell's 20,000-acre Cathedral Bluffs property in Rio Blanco County, the company has been testing its patented method of burying heaters encased in pipe hundreds of feet underground, then liquefying the oil trapped in porous rock so it can be pumped to the surface.

O'Connor said earlier this year Shell hoped to have a commercially viable operation in the area by 2010.

Seeking alternatives

- **Eight companies have submitted applications to the BLM to mine for oil shale on federal land in Colorado:**

Natural Soda

EGL Resources

Exxon Mobil Corp.

Kennecott Exploration Co.

Independent Energy Partners

Phoenix Wyoming

Chevron Shale Oil Co.

Shell Frontier Oil and Gas (three applications submitted)

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